

Distance & Displacement

Name: _____

Date: _____

1. Consider a child who walks 3.4 m down a hallway and then turns around to come back to where he started. Find both the child's distance and displacement.
2. A passenger train travels at 120 km/h between Chicago and Detroit. A woman gets up from her seat and walks to the back of her train car at a speed of 1.2 km/h.
 - a) When describing the speed of the train, what is the reference frame?
 - b) When describing the speed of the woman, what is the reference frame?
 - c) Consider the woman's speed. What would her speed be if we used the ground outside the train as a reference frame?
3. Imagine you are driving east and your friend is standing at a bus stop. Considering reference frames, which of the following statements is true?
 - A) In your frame of reference you would be moving, but in your friend's reference frame you are at rest.
 - B) In your frame of reference, your friend is moving west. In your friend's frame of reference, he will be at rest.
 - C) In your frame of reference, your friend is moving east. In your friend's frame of reference he will be at rest.
4. A car drives 75 km south and then turns around and drives 45 km north. Calculate both the displacement and the distance traveled.
5. A child rolled a toy car forward 145 cm and then backward 185 cm. Calculate both the distance and displacement of the toy car.
6. John drove 56.883 m and then turned around and drove 76.234 m in the opposite direction. Calculate both John's distance and displacement.